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CONTRIBUTIONS
TO
OPHTHALMOLOGY

BY
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AND
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CASES OF OPHTHALMIC DISEASE IN WHICH ENFORCED EXPOSURE OF THE EYES TO LIGHT AND AIR WAS SALUTARY. By Dr. C. R. Agnew, New York.

It is often a nice question in ophthalmic therapeutics whether the sensitiveness of an eye to light and air is to be indulged or resisted, and at what point in the progress of treatment exposure to light and air must be insisted upon, even though the apparent immediate effect may be to induce photophobia, lachrymation, or other indications of suffering. The following cases may, in unfolding the subject, serve as a basis for some safe and useful practical deductions. It is in this hope that we give them to the Society.

The first case is one of phlyctenular keratitis in a girl six years of age. The child had always lived in a salubrious mountain district, and had had fair health. The mother stated that there was scrofula in the blood on the father's side. The eyes had been inflamed for some weeks before they came under our observation, and during that period were constantly closed. For more than two weeks the extreme photophobia had caused the child to be confined in a dark room and to bury her face in a pillow, both during sleep and when awake. Under these circumstances the child was brought to New York to be under our care. The photophobia was now so extreme that even the most imperfect examination of the parts was difficult, and accompanied by violent spasm of the orbicular muscles and paroxysms of sneezing.

It was ascertained, however, that there were small superficial ulcers upon both corneæ, with delicate vessels starting from the coronæ, and slight circumcorneal injection.

Well lighted and airy rooms were got for the patient at a high level in a good hotel. A good dietary, including milk, fruit, and a moderate amount of beef, was prescribed. The amount of exercise and exposure to light was restricted, and attention was paid to bathing and every other sanitary need. The eyes were treated locally with atropia, levigated calomel, and water-baths at the most agreeable temperature. Iron and cod-liver oil were given internally, and at

night the entire surface of the body was rubbed to a glow and anointed with vaseline. The child improved in color and general condition, but not so the eyes ; they remained unchanged. A double canthotomy was accordingly done, under ether, hoping thus to relieve the extreme spasm of the orbicular muscles. The general tonic course was continued after this for a period of seven weeks, without any appreciable amelioration of the state of the eyes. Much exercise in the light was simply impossible, as the child, when taken to the streets or park, except at night, would resist with loud crying. The eyelids continued to be, as they had been, swollen and red, and every attempt to inspect the eyes was resisted and provocative of a gush of acrid tears and persistent paroxysms of sneezing. When the lids were forcibly opened, the eyes, although not extremely red, were moderately so, and the general surface of the scleral conjunctiva and cornea had a soaked look. All the appearances impressed an observer with the idea that the repair of the diseased surfaces was prevented by the perpetual soaking of those surfaces by the excessive and altered secretions, and that the leading indication was to open the eyelids forcibly.

On the 30th of March, to meet this indication, the child was placed under ether in a well-lighted room. First one eye and then the other was forcibly opened with a spring speculum. The eyes were thus, for a moment or two, exposed to the light and air, until the corneal surface began to look slightly dry, and the excessive secretions were carefully removed from the cul-de-sac with a soft linen rag. These proceedings were repeated several times in the case of each eye for about fifteen minutes in all. When the full flood of diffused light entered each eye as it was held open, it was observed that some resistance was made by the child, although at other moments the anæsthesia seemed to be complete. The treatment was repeated on the next day, the 31st inst., and again on the 3d, 5th, 7th, 9th, and 11th of April, in all seven times, and in every instance with the effect of lessening the intensity of the photophobia and orbicular spasm. On the evening of the 9th inst., after the sixth application of the method, the child, for the first time in nearly three months, voluntarily opened her eyes. On the 10th she was still able to open them. On the 11th the effect of the ether was prolonged, although the quantity used was not greater than on previous occasions, and there was much vomiting during the afternoon and evening, and also the next morning after breakfast. On the 13th inst. the eyes were widely opened, the corneal abrasions healed, the

conjunctival congestion almost all gone, and the photophobia and lachrymation not annoying. In a few days the patient went away well, and on inquiry some months later was reported as being still so. Dr. Webster saw the child a year afterwards and reports that she was still well.

It is, we think, fair to suppose that the main agency in the cure was the forcible exposure of the badly nourished eye tissues to the action of light and air. The influx of light and contact of air would naturally awaken the dormant or perverted energies of the tissues, and quicken the reparative action. It may be said that the repeated effect of the ether would tend to neutralize morbid sensibility and harmonize the reparative forces. We are aware of the possibility of such an agency, and would not exclude it entirely in this case. Indeed, we have often seen, in cases of phlyctenular disease, where extreme photophobia had induced the use of an anæsthetic to facilitate the examination of the offending eye, the distressing symptoms greatly lessened on the recovery of the patient from the anæsthesia. But in this case the patient had had ether employed and a canthotomy done without benefit, and subsequently got well as described.

Moreover, in other instances, in older subjects, we have tried the method of forcible exposure, without the intervention of an anæsthetic, and with good effect enough to make us trust it in otherwise incorrigible cases. The following case, although not retained to its end, may illustrate our meaning: O. B., seventeen, was hit in the eye with an apple-core in 1874. Superficial inflammation ensued, which ran into double trachoma and panniform keratitis. He had had all the benefit of treatment by various skilful hands, and ran the gauntlet of those who had advised multiform nostrums. He came under our observation March 26, 1878. His photophobia was extreme, and it was almost impossible to inspect the eyes on account of violent and prolonged paroxysms of sneezing which agitated his head and entire body whenever the lids were forcibly opened to admit light. The patient was etiolated and very feeble by continuous incarceration in the darkened room of a tenement-house. When the attempt was made by digital pressure to antagonize the orbicular muscles and open the eyes, every muscle in the face and neck seemed to resist, and his mouth would open widely in the general grimace. In this case we used the method of forcibly opening the eyelids with the spring speculum and without any anæsthetic. We placed the patient erect with his back against the wall, and facing a north window, and introduced the speculum into one eye at a time, and kept it clamped

in place, widely distended, while the patient slowly counted one hundred, we having observed that that marked the limit of his endurance. The act of counting diverted his mind and consumed five minutes. We then did the same with the fellow-eye. In placing the speculum, care was taken to open it as widely as possible and then to clamp it, so as to distend the palpebral slit to its utmost. The effect of this treatment was so marked and immediate that the patient soon left the office able to open his eyes partially, and returned on the following day with both eyes more widely opened, and so tolerant of manipulation and light as to make an inspection relatively easy. Again the speculum was introduced as before, and the palpebral slit distended. The improvement went on continuously during the few days that this patient was under treatment, but the pannus and the old opacities darkened the prognosis, and he soon failed to reappear.*

We might adduce other cases of this class, but enough have been given to impress the lesson that because light produces distressing symptoms in certain eye cases we are not, therefore, to indulge the patient in his desire to live in the dark or to multiply eye-shades; but, on the contrary, to resort to active measures, which, on superficial observation, might seem to be opposed to the indications of treatment. Many so-called indications remind one of the sign-board at a cross-roads, which, having been blown down in the night, was replaced so that its directions were exactly wrong. We must test indications by most careful deduction, to which all the phenomena drawn from many related cases yield their true logical value.

While transcribing the last case, a case of extremely irritable, non-specific, interstitial keratitis in an adult came under observation, in which out-of-door life, foot exercise, a daily air-bath with friction with the hair mittens, and a Turkish bath every other day, inaugurated a new action and led to reparative changes. In this case there had been acne and a tendency to lay up loose, flabby flesh.

The following case, which had been kept in the dark for nearly *nine years*, will illustrate the danger of not translating correctly the indications for treatment. H. B., 21, was first seen by us in his home in a distant part of the State. We reached his house in the afternoon and were shown into a darkened hall, and thence escorted through a darkened ante-room into the dark chamber in which the expectant patient was incarcerated. Screens and window-shades, and outside blinds had been so cunningly arranged that our limp patient with the

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* Seen some months later and condition of the eyes vastly improved.

moist, flabby hand was invisible until we insisted upon having the light of a dim candle. The history of the case was as follows. Nearly nine years ago, after reading steadily for three hours, he suddenly felt a sense of numbness and formication around the eyes and in the forehead between the supra-orbital nerves, and lost the power of fixing his eyes steadily even on large objects. Photophobia soon supervened, "amounting almost to agony." He betook himself to a dark room, in which he remained continuously for nineteen months. He then was taken, with eyes so covered as to exclude light, to a distant town, where he was treated for some months "for paralysis of the optic nerves." He grew worse under this treatment, and therefore returned home and to the dark room, in which he remained for the remainder of the period of nine years, only going out occasionally, and then after dark, and always with the precaution of a shade of some kind to exclude moon or star light.

It was obvious that the habits of years could not be changed in a domicile in which almost every device suggested by tender solicitude for the sufferer was, in our opinion, working against the cure. We accordingly suggested his removal to the Manhattan Hospital, New York, which was accomplished on November 1, 1873. He was brought to the hospital with his eyes so covered by black bandages as to exclude every ray of light. These were removed in spite of fervent protests. The vision was then tested under as much light as he would bear, which was, however, of a degree making reading for the normal eye difficult. It was found that he could read Snellen No. $6\frac{1}{2}$ at eight inches. It was with great difficulty that he could be persuaded to fix his eyes on any object. The effort to do so caused them to roll about in the orbits, and his head to nod and jerk backward and forward. He would throw his arms about in an aimless manner, and exhibit in various other ways the want of self-control. We could not classify the symptoms with chorea. He was blanched in color, through long seclusion from light, and greatly emaciated. A few days after his admission we made an ophthalmoscopic examination, and found that he was myopic, and that there was slight neuro-choroidal hyperæmia. As regards the latter phenomenon we were by no means certain, however.

The treatment consisted in gradually increasing the exposure of the eyes to light, for which specific directions were given daily, and a course of simple calisthenic exercise and stated out-of-door walks. We broke up at once the habit of depending upon others for every want, and on one occasion, having taken him a little distance from

the hospital, suddenly left him to find his way back alone. It was interesting to observe how, in a child-like manner, he regained the ability to wait upon himself, having lost the art so thoroughly by nine years of dependence upon others, though by no means deficient in intellect.

Nov. 17th.—The vision for the distance was tried and found to be $\frac{20}{70}$ with $-\frac{1}{16}$. He was then put upon a course of hypodermic injections of nitrate of strychnia.

Dec. 22, 1873.—Vision $\frac{20}{50}$ with $-\frac{1}{30}$. He was now sent home, with specific instructions to live in the open air and to expose himself to sunlight. Shortly after leaving the hospital *psoriasis* broke out on his forehead, covered the scalp, and spread on to the neck, and was so inveterate as to compel him to return to the city for treatment.

In November, 1874, the date of the last notes in his case, the vision was as follows: Right, without glass, V. $= \frac{20}{200}$; with $-\frac{1}{30}$, V. $\frac{20}{30}$. Left, without glass, V. $= \frac{20}{200}$; with, $-\frac{1}{20}$; V. $= \frac{20}{30}$. The eyes were no longer sensitive to light or in any way troublesome.

Some years previously to our seeing this case we had seen another case almost the fac-simile of it, both as regards history and recovery. That was in the person of a young man from Vermont, who had been incarcerated in the dark for more than eight years for an eye affection in which photophobia was the ruling symptom. In that case not only had the general health been profoundly depressed, but epilepsy had been superinduced. In that case also the main element in the treatment which we employed was the use of light, with regular exercise to quicken tissue-change and tissue-building, Formerly it was the almost universal practice to immure patients in the dark, not only for affections in which photophobia was a symptom, but for any eye disease or injury, irrespective of the effect of light. The exclusion of light necessarily involved also the exclusion of air, and as the sufferer was ordinarily confined to the same room by day and by night, and not unfrequently with a number of other victims, an unsanitary state was produced, the odor of which is quick in our memory to this day. That entity compounded of body odor and darkness has never ceased to be repulsive or to impress its lesson upon us, and yet we can look back with the conviction that we also have been too prone to exclude light in the treatment of our patients. We may adduce the change which has occurred in our treatment of cataract cases. We can easily recall the time when we shut our patients in darkened rooms, after cataract extractions, for a period varying from one to five or six weeks,

with only occasional introduction of daylight. Now, we never shut them in the dark. The instructions are to have the apartment light enough for the attendant to see to read ordinary print, while we exclude light from the patient's eyes by means of a black shade or darkened coquilles so long as entire rest of the wounded organ may be essential to the cure, watching carefully for the earliest moment at which the use of light as a remedy may be adopted. By this method the patient lives in an atmosphere so illuminated as to be conducive to general nutrition and to the uniform practice of a hygienic regimen. The quality of the nursing is always better when light pervades the sick-room. The attendants are more cheerful, and more exact in all their manipulations. Specific directions given by the surgeon will ensure the coaptation of the black silk mask over the eyes, or the use of the dark coquilles, and make any sudden exposure of the eyes themselves to the light improbable.

It may be said that we cannot safely deduce from such cases rules to be applied in the treatment of other cases in which photophobia exists, or in which rest of the organ of vision is naturally demanded. This leads us to ask the questions whether light should *ever* be entirely excluded from the room in which an ophthalmic case is, and if so, under what conditions, and whether it is not better to use contrivances to exclude light from the eyes, while it is allowed to pervade, with its life-giving power, the atmosphere in which the patient is kept?

These questions involve the sanitary construction and management of ophthalmic wards. In answering these questions we would say emphatically that we would not shut a patient in a dark room except when nature provides the way at night, or for such other and brief periods during the day as might be agreeable for sleep or entire quiet, or for the temporary application of iced or other dressings incompatible with the use of the black silk eye-mask or coquilles.

In cases of retinal, neural, or choroidal disease, in which local bloodletting should be immediately followed by absolute exclusion of light from the eyes for a period varying from twenty-four to thirty-six hours, the use of the black silk mask carefully adjusted meets the indication fully, and having been applied securely by the surgeon, is less likely to be so displaced as to admit light than window-screens to which incautious persons have access.

The value of the local method of excluding light is very great in all those forms of cachexia, like gout, rheumatism, syphilis, and scrofula, in which we have to use every sanitary resource to cure the

patient, to lessen the amount of local damage, or to diminish the tendency to recurrence of the local disease.

The inducement to shut a patient in the dark in iritis, for instance, is almost irresistible. The nature of the tissues primarily involved, the importance of such related parts as the crystalline lens, the ciliary organs, and the choroid, seem to make it the imperative duty of the surgeon to put his patient in the dark and to keep him there until he is well. We are bound to say, that in our experience, ambulant patients with acute iritis get well with as few permanent lesions as any other class, and in less time. This fact was early forced upon our attention by observing the results of practice in dispensary patients, as contrasted with those of patients in the walks of life in which every element of rest and seclusion and medical attendance in domicile could be commanded. To our surprise, the poor man, exposed to many hardships, would get well quickly, while the more luxurious patient would linger, and perhaps suffer more and have more relapses.

Atropia, Turkish baths, and Mercury are the cardinal remedies in iritis, and the first-named can never be safely omitted. Over and over again we have seen patients with acute iritis far on to convalescence within a week after beginning such a plan of treatment, and without any other precaution against exposure to light than would be afforded by a pair of smoke-colored coquilles, medium shade. It may not be considered a useless digression if we say here that we always use a solution of sulphate of atropia at least four grains to the ounce, and apply it every ten minutes for six or eight consecutive times before we allow the patient to go from observation, and order an immediate Turkish bath. We have frequently seen a pupil dilated fully after a Turkish bath, which had previously yielded little, if at all. Where such baths are not to be had, their effect may be imitated by any method which produces free sweating and is accompanied by shampooing of the head.

As we have seen, a few hours of improper incarceration in a dark room may give a character to a case which will deceive both patient and physician as regards the true indications. We cannot be too much alive as to the danger our patients are in of forming habits which, although apparently essential to recovery, or to any degree of comfort even, are directly in the way of a possibility of cure.

As an illustration of this principle, we adduce another case in addition to those already given.

Some time ago we were called in to see a lady of middle age, who for many months had been confined to a dark room. Not being well,

and being of a very nervous temperament, she had become alarmed when her eyes, which had previously been strong and useful for all purposes of vision, began to be defective in endurance and to grow morbidly sensitive to exposure to ordinary use and common light. Instead of throwing off some of the enervating appliances of luxury, she gradually ceased from exercise, and as she grew weaker, spent more and more time in bed. Day after day she shut the light and air more and more from her apartment, until when we called she was existing in a room which was as hermetically sealed against light and air as a room with two large windows and three doors could be. There were at the windows outside blinds, inside shutters, and hanging curtains. All the doors except one were closed, locked, and their marginal cracks and key-holes stuffed with cotton. The door by which access was had to the chamber was at the end of a double-door hall and leading out of an adjoining room, which was kept dark. It was difficult to persuade either the attendants or the patient that so small a light as a candle would be tolerable. A candle was got, however, and after great difficulty an examination made. We could find no organic disease of the eyes, nor any spinal or cerebral malady to account for the extreme hyperæsthesia. The main cause of the aggravated symptoms seemed to be a yielding on the part of the patient to the photophobia until all power to resist it was in abeyance, and nothing could come in to act as a curative except the firm will of the medical attendant subverting the entire method of treatment previously employed. In a very few hours we had the patient moved into a clean, dimly lighted room, and the chamber from which she had been extricated, sunned, ventilated, and scrubbed, processes to which it had not been subjected for several months.

We are prepared then to say, in summing up our experience, that daylight should not be excluded from apartments in which ophthalmic cases are being treated. That it will be frequently necessary to oppose vigorously the tendency of a patient to dwell in the dark. That, as a rule, the importance of and necessity for the use of light as a remedial agent will be in inverse proportion to the inclination of the patient. That we cannot always depend upon the presence of photophobia as an indication for the prolonged use of darkness as a remedy. That photophobia is not usually a very marked symptom in retinal, neural, or choroidal cases in which the interrupted use even of darkness as a remedy is demanded, but that the ophthalmoscopic lesions are more to be depended upon as guides. That, as a

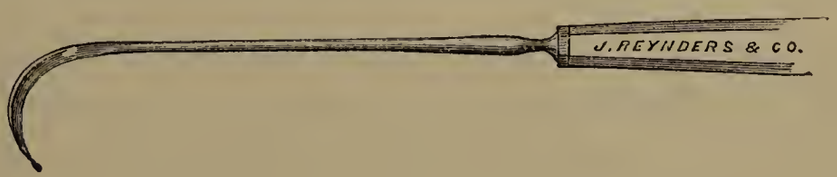
rule, corneal and iritic affections do not demand the entire or continuous exclusion of light, and that many cases of those diseases are either aggravated or made hopeless by such exclusion, and especially when they are not traumatic, but the offspring of some diathesis or cachexia. That under the latter circumstances every hygienic and therapeutic consideration is opposed to the exclusion of light. We recall, in writing this sentence, a case of syphilitic iritis to which we were called in consultation, where the patient had been kept for three months in the dark, and during most of that time under the full effects of mercury, without saving his eyes, and with the result of a bankrupt constitution. We will not soon forget the wretched appearance of the victim as we let the light of day upon his blanched face, and saw the drooling of saliva from his flabby lips.

We believe that it is better to depend upon some opaque covering for the eyes when partial or complete darkness is to be used as a remedy, and not to exclude light from the apartment, and by such exclusion to lessen ventilation and induce etiolation.

Scarcely a day passes in our practice in which we do not see one or more cases where damage has been done, and often of an irreparable nature, not only to the general health, but also to the diseased eyes, by methods the opposite of those which we are striving to commend to your favor.

A CURVED KNIFE FOR CERTAIN FORMS OF STRICTURE OF THE INFERIOR LACHRYMAL CANALICULUS. By Dr. C. R. Agnew, New York.

All must have encountered cases of lachrymal obstruction in which the calibre of the inferior canaliculus is greatly reduced by a stricture just where the canal should pass by a free opening into the lachrymal sac. I have long observed that the common strabismus-hook would pass such a stricture when a probe or probed knife pressed onward in the plane of the canaliculus would be stopped entirely, or, if unduly pushed, perforate the floor of the canal, and make a false passage below the stricture, and between the sac wall and the maxillary bone. The curve in the strabismus hook seemed to make it comparatively easy to override the stricture and to pass the instrument forward into the dome of the lachrymal sac. Following out this line, it occurred to me to make an instrument shaped somewhat



like a strabismus-hook, only a little more curved, and upon a smaller arc, and to sharpen the inside of the curve, and to make the extremity probe-pointed, so that, having passed it into the sac, I might incise the upper wall of the canaliculus at the sac entrance, and so make way for subsequent instrumental manipulation. The instrument here delineated may also be made to cut the lower floor of the canaliculus near the sac by first introducing it into the sac with the convex edge downward, and then sweeping it around before withdrawing it, so as to make it cut downward.

The instrument may not be new; my colleagues may think it of no value. I have only to say that I have used it with benefit to patients when other means had failed.

Note—The bulb on the free end of the knife should not be quite so large as the cut shows.

THE ÆTIOLOGY OF RETINITIS PIGMENTOSA, WITH CASES. By Dr. David Webster, New York.

Mr. Jonathan Hutchinson, in the *Ophthalmic Hospital Reports*, Vol. VII., page 435, says: "An ophthalmic surgeon, who may chance upon a good example of this rare malady, and may not feel inclined to trouble himself about it farther than the limits of his own specialty, is bound in the interests of general medicine to hand it over for investigation to some naturalist of wider sympathies."

In regard to the ætiology, he says: "There cannot be the slightest doubt that it is remarkably hereditary," and that "cases which favor the belief that consanguineous marriages may produce a tendency to it are of special value." He further states that "inherited syphilis may produce changes exceedingly like those of retinitis pigmentosa, but to be distinguished from the true disease on careful examination."

Stellwag tells us that "in a series of cases the disease has proved to be hereditary," and that "statistics show that it occurs much more frequently in children whose parents were blood-relations, than otherwise."

Schweigger says: "Heredity is an important element in the ætiology of the disease," and, without stating the results of his own observations, tells us that "more comprehensive statistics with reference to the matter of consanguinity are desirable."

Carter has never met with a case of retinitis pigmentosa in which any relationship between the parents existed, but generally finds more than one in the same family similarly affected. He has never been able to connect the disease with syphilis, either inherited or acquired.

Macnamara informs us that consanguinity of parentage cannot be the cause of the disease among the natives of India, as they are most scrupulous in observing the restrictions they place upon the intermarriage of relations, and yet he has seen some twelve or fifteen instances of it among his native patients within a period of one year. He says the disease is hereditary, and occurs frequently in several members of the same family; he is also disposed to look upon it, in some cases, as the result of inherited syphilis.

Wells says the disease is often hereditary, but seems to found his opinions entirely upon the observations of others.

Liebreich was the first who called attention to consanguinity of parentage as a cause of retinitis pigmentosa, and we do not wonder that he believed he had made a valuable discovery when we are told that in fourteen out of thirty-five cases he was enabled to prove a descent from blood-relations.

Mooren noted consanguinity of parentage in nine out of thirty-four cases.

Leber, in "*Handbuch der gesammten Augenheilkunde*," Vol. II., page 653, reports sixty-six cases of retinitis pigmentosa observed by himself. Forty-four were of the usual kind, while twenty-two were complicated with congenital atrophy of the retina. He found consanguinity of parentage in eighteen cases, or 27.3 per cent.; the disease affecting other brothers or sisters in fourteen cases, or 21.2 per cent.; heredity in one case, or 1.5 per cent.; hereditary syphilis in five cases, or 7.6 per cent.; and in twenty-eight cases, or 42.4 per cent., no cause could be ascertained.

We should infer from the observations of Liebreich, Mooren, and Leber, that consanguinity of parentage was one of the most frequent causes of the disease, and yet many other observers have failed to find it in any case.

In the report of the Wiesbaden Eye Infirmary for 1861–2, twelve cases of retinitis pigmentosa are given, and in not one was any consanguinity of parentage traceable.

Lawrence and Moon report four cases in the *Ophthalmic Review* for 1866—three boys and a girl in the same family. There was no consanguinity of parentage or traceable syphilis in the family.

Mr. Hutchinson reports four cases, none of whom showed consanguinity of parentage. In one case there was heredity, two of the patients being father and daughter.

Harlan, of Philadelphia, has reported a case, a girl of eighteen, without consanguinity of parentage, heredity, or inherited syphilis.

My friend, Dr. W. Cheatham, of Louisville, Kentucky, has been kind enough to furnish me with the following most extraordinary history of a family afflicted with this disease. He says: "I was called, lately, to see a case of cataract that had been operated on seven weeks previously. On examination I found dark-colored cataract of the right eye. The pupil of the left eye was closed, and the eye-ball was very tender to the touch, and quite painful. Both visual fields, as tested by a lighted candle in a dark room, were contracted to almost nothing.

"On getting the history of the case, that of the whole family

was given, extending back for a period of over two hundred years. Thinking, from the history of the patient, that the eye trouble from which the family suffered was retinitis pigmentosa, I requested that some of them should submit to an ophthalmoscopic examination. Two gentlemen of the family called at my office the next day. The examination revealed well-marked retinitis pigmentosa in both cases. They were kind enough to give me a full history of their family, one branch of which can be traced directly to Pocahontas. The disease had been in the family for over two hundred years. A peculiar feature of it, as it existed in them, was that it attacked about one-half of them only. It appeared to select about every other one. For instance, one member of the family had nine children. The first one born had the disease, the second one it missed, the third had it, and so on through the whole of the nine children.

"Another interesting feature is, as soon as twilight sets in, the blindness usual in such cases begins, yet, by bright moonlight, some of them are able to read the finest print; but the instant they get into the slightest shade the hemeralopia again appears. Again, there has been but one intermarriage in the family, and the children of this couple are the only ones all of whom are entirely exempt from the disease, all the others, as I said before, having about every other one attacked by it!"

Dr. Cheatham informs me that the family whose history is related above is "one of the most numerous in the South." It certainly demonstrates, beyond all reasonable doubt, the hereditary nature of retinitis pigmentosa.

I have succeeded in collecting from the case-books of Dr. C. R. Agnew, with his kind permission, nineteen cases in which the records were tolerably complete, and, adding to these three cases which I saw in Massachusetts, I am enabled to present to the Society the histories of twenty-two cases, nearly all of which I examined personally.

Inspection of these cases will show that consanguinity of parentage was traceable in only three out of the twenty-two cases, or in 13.6 per cent. Possibly this does not very much exceed the general percentage of intermarriages of blood-relations in the United States, and when we observe that in one of the three cases heredity undoubtedly existed, the mother having always seen much worse than other people after dark and in darkened rooms, and that in another of them a suspicion of heredity exists, the mother having long been subject to weak eyes, and that in the third case the patient was a

deaf-mute, we are inclined to the opinion that consanguinity of parentage, if at all, is a comparatively weak element in the causation.

Heredity was present in seven cases, or in 31.8 per cent., and there was good reason for suspecting heredity in several other cases, but it could not be proved.

Three of the patients were members of the same family, and three others had brothers, sisters, or cousins with the same disease.

One patient had a daughter with an appearance and history which would lead one to suspect inherited syphilis.

One patient attributed the disease to his having been struck by lightning at the age of eight.

Two of the patients were deaf-mutes.

One or two of the patients had relatives with various diseases of the nervous system.

In six cases no cause was ascertained, there being no heredity, no consanguinity of parentage, and no history of nervous diseases in their families.

I append, in full, the notes of the twenty-two cases, as some of them contain points of interest aside from the causation.

CASE I.—Ella P., 16. First noticed night-blindness five or six years ago. She sees well in the day-time, and in the night can see to read and write by gaslight, but cannot see well enough to get about alone. Vision $= \frac{20}{200}$ each eye; no improvement with glasses.

Ophthalmoscopic Examination.—Each eye H. $\frac{1}{24}$. Retinitis pigmentosa and partial atrophy of optic nerve, both eyes; slight posterior polar cataract right eye.

Her father and mother are first cousins. Her mother has always had weak eyes.

CASE II.—S. Q., 16, deaf-mute. Has vision $= \frac{20}{70}$, each eye, and no improvement with glasses. His visual fields are greatly contracted.

The ophthalmoscope shows H. $\frac{1}{10}$ each; retinitis pigmentosa with atrophy of optic nerves and retinæ.

His father and mother are cousins.

CASE III.—Oct., 1868. Frederic S., 20. Since childhood, or as far back as he can remember, he has not been able to see well in the dark. He has to be led about after dark. He can see by gaslight as well as by day. He has never suffered from pain or other trouble in the eyes. His parents were first cousins, once removed.

His mother has always seen badly at night, or in a darkened room, and has remarked especial difficulty in getting up and down the stairs in hall-ways that were not well lighted. She has, however, no pigment deposits in her retinæ, and seems to be one of those cases of "retinitis pigmentosa without the pigment," that have lately been described. The patient's grandmother is over 90, and reads the finest print without glasses, and yet is said not to be near-sighted.

Ophthalmoscopic Examination.—Typical retinitis pigmentosa; the retina looks hazy, especially near the optic nerve; the retinal vessels are diminished. Vision = $\frac{20}{20}$ (—) with — $\frac{1}{48}^{c}$ each eye; acc. = $\frac{1}{5}$; no insufficiency of ocular muscles.

Feb. 1, 1878.—V. = $\frac{20}{30}$ each, and not improved by glasses. Each visual field reduced to an area of about four inches in diameter at a distance of one foot.

The patient was placed upon daily hypodermic injections of a solution of nitrate of strychnia, commencing with gr. $\frac{1}{40}$ and gradually increasing the dose until, on Feb. 11th, the physiological effects of the drug were produced. Neither central vision nor the visual field was appreciably affected by it, and the patient was dismissed with an unfavorable prognosis.

CASE IV.—April 30, 1878. Mrs. T. H. M., 42. Has always had poor vision with hemeralopia, and lately it has been growing worse. R.V. = $\frac{2}{100}$; no improvement with glasses. L.V. = $\frac{20}{100}$; V. = $\frac{20}{80}$ with + $\frac{1}{16}$.

The limitation of the visual fields is not concentric, but very irregular, and there are numerous scotomata.

Ophthalmoscopic Examination.—Both eyes H. $\frac{1}{16}$; the right retina is loaded with pigment deposits of all sorts, sizes, and shapes; the left shows the same appearances, but in less degree. There is partial atrophy of both optic nerves.

The patient's father and mother were both of the same name, but not related to each other. She has three sisters and a brother living. The brother has impaired vision, with eyes which the patient states "are just like hers, only not so bad." The three sisters see well. Her father's brother married his first cousin and had nine children. Three of these became blind and afterwards idiotic; a fourth had good sight, but was attacked with scrivener's palsy, and some years later died of a disease of the nervous system.

Mrs. M. was placed upon injections of nitrate of strychnia, commencing with gr. $\frac{1}{24}$.

May 1.—Has had a great deal of pain in left eye since her visit to

us yesterday. There is some deep injection of the eyeball. Ordered to bathe the eye frequently, and injected nitrate of strychnia, gr. $\frac{1}{20}$.

May 2.—The pupil of the left eye is irregular, showing adhesions, and there is a moderate amount of pericorneal injection, showing the existence of iritis. A solution of sulphate of atropia (gr. iv. ad $\frac{z}{3}$ j.) was dropped into the eye four times while the patient remained in the office about an hour, but failed to dilate the pupil regularly. Injected strychnia, gr. $\frac{1}{17}$.

May 3.—Patient states that after she left the office yesterday her mouth and throat became dry, her head felt full and heavy, and she "went sound asleep" in the horse-car going home, and fell asleep in a chair after she got home. The pupil is widely and evenly dilated, and the redness has disappeared. Injected strychnia, gr. $\frac{1}{15}$.

May 15.—The patient has had a daily injection of strychnia. One-ninth of a grain was injected to-day, and produced some stiffness of the limbs. Her vision remains unchanged.

CASE V.—Sept. 12, 1873.—Mrs. E. L. J., æt. 53, states that seven or eight years ago a blur began in her right eye after a great shock to the nervous system in the death of a daughter. During the four weeks previously she had been deprived of sleep and constantly in the sick-room. Had a second daughter ill who died last summer. Has wept much and evidently been greatly shocked in her nervous system. Reads J. No. 15 very slowly, picking out letters at 11″ with glasses. Ophthalmoscopic examination shows retinitis pigmentosa. Injected strychnia, gr. $\frac{1}{24}$, and a few minutes later patient reads J. No. 12.

Sept. 15.—A few minutes after injecting strychnia, gr. $\frac{1}{24}$, patient reads J. No. 5.

Her husband writes, under date of May 10, 1878: "My wife died two years ago. Her sight continued gradually to fail, until it became difficult for her to get about without assistance. Her father and mother were not related to each other. Her older brother, who died some years ago, was troubled with imperfect vision, more especially I think at night. I never knew any other member of her family who was affected in that way."

CASE VI.—Jan. 13, 1874.—Mr. C. Z. L., æt. 25, law student, always had an imperfection of vision, near-sightedness, and difficulty of seeing in the night. Otherwise, eyes seemed quite strong. In Aug., 1871, first noticed clouds floating through visual field; moving his eyes would set them in motion, and when the eyes were fixed they would settle down and disappear. Soon after waves of light

commenced to sweep across his eyes, and have continued to do so up to the present. For more than a year he has had a constant appearance as of the flickering of candles. Since last winter he has had, once or twice a week, appearances like a ball of fire passing across the field of vision. Occasionally a small black spot surrounded by a ring of light is seen for a few moments.

No consanguinity of parentage. Mother died of consumption; father of dropsy. Has two brothers and two sisters. One brother and one sister have imperfect sight.

R.V. = $\frac{20}{50}$; L.V. = $\frac{20}{50}$; no improvement with glasses. Visual fields greatly contracted. Reads J. No. 1 at 9″ with each eye.

Ophthalmoscopic Examination.—Fundus beautifully besprinkled with the characteristic changes. Pigment patches, increasing in size and frequency in the periphery, some running over the vessels. There is a vessel in fundus of right eye, above the optic disc, which is a streak of pigment as far as it can be traced. There is thinning of the choroid in places, and the nerves have a somewhat atrophied look.

Injected strych. nitrat., gr. $\frac{1}{24}$. Before the injection he read J. D. V. and I. in $\frac{20}{50}$, but could not read the four intervening letters with each eye; five minutes after, he read all the letters in $\frac{20}{50}$, and T. P. and Z. in $\frac{20}{40}$ with each eye under the same conditions. The injection made him dizzy.

Jan. 14.—Injected strych. nitrat., gr. $\frac{1}{12}$, but no appreciable improvement of vision followed.

CASE VII.—A. C., æt. 44, manufacturer. Was always subject to night-blindness, but only a few years since began to notice impairment of vision in the day-time. A few years ago he got hot lead into his right eye, and has not been able to read with it since. His mother is subject to night-blindness. His maternal aunt has two children who are subject to night-blindness. His maternal uncle has one child with night-blindness. The patient has three sisters, all subject to night-blindness, thus making eight in the same family, all victims of this disease. R.V. = $\frac{20}{200}$; L.V. = $\frac{20}{30}$; no improvement with glasses. Visual fields about circular, and very small.

Ophthalmoscopic Examination.—Retinitis pigmentosa very marked in both eyes; right eye has also posterior polar cataract and floating bodies in the vitreous.

No consanguinity of parentage.

CASE VIII.—Miss M. C., æt. 16. Has for five years been the subject of night-blindness and gradually deteriorating vision.

R.V. $= \frac{4}{200}$; L.V. $= \frac{4}{70}$; no improvement with glasses. Fields extremely small. No heredity or consanguinity of parentage traceable.

Ophthalmoscopic Examination.—Periphery of each retina sprinkled with the deposits characteristic of retinitis pigmentosa. Optic disks and adjacent choroid show evidences of atrophy.

At the age of eight this patient was struck by lightning, and rendered insensible for a few moments.

CASE IX.—George L., æt. 14, deaf-mute, and always subject to night-blindness. V. $= \frac{20}{70}$ each; no improvement with glasses; visual fields concentrically limited.

Ophthalmoscopic Examination.—Retinitis pigmentosa, with partial atrophy of optic nerves. No consanguinity of parentage or heredity traceable.

CASE X.—Joseph B., æt. 60, laborer. States that he saw as well as he *ever* saw, but not as well as other people, up to two years ago. He has always seen much worse at night and on cloudy days. Blindness came on very gradually. R.V. $= \frac{4}{\text{fingers}}$; L.V. $= \frac{\frac{1}{2}}{\text{fingers}}$; no improvement with glasses. Visual fields reduced to one inch each in diameter, at one foot. No heredity or consanguinity of parentage.

Ophthalmoscopic Examination.—Retinitis pigmentosa with atrophy of optic nerve, and polar cataract in both eyes.

CASE XI.—Mrs. W. P. E. M., æt. 40. Has R.V. $= \frac{20}{70}$ with $- \frac{1}{4\frac{1}{2}}$; L.V. $= \frac{1}{200}$; no improvement with glasses.

Ophthalmoscopic Examination.—Retinitis pigmentosa of both eyes, with atrophy of left optic nerve. No consanguinity of parentage.

The patient brings her daughter for examination. She is aged 17, and has an eroded, moth-eaten look at the angles of her mouth, and a constriction around the middle of her forehead. She had keratitis following scarlatina at the age of ten. When 11 months old, she had paralysis of her left side, and she still walks heavily on that side. She now has opacities of both corneæ, staphyloma posticum, and disseminated choroidal atrophy of both eyes, and floating bodies in left vitreous.

CASE XII.—Ernest G., æt. 24, theological student. States that his sight became weak at about 9 years of age. His father and mother are not related, and he knows of no heredity.

R.V. = cannot count fingers correctly, but has a visual field one inch in diameter at one foot.

L.V. $= {}_2\frac{4}{200}$; visual field two inches in diameter at one foot. Both visual fields very nearly circular.

Ophthalmoscopic Examination.—Retinitis pigmentosa, with posterior polar cataract, and partial atrophy of optic nerve, both eyes.

CASE XIII.—Mrs. B. F. F., æt. 34. R.V. $= \frac{20}{70}$; L.V. $= \frac{20}{100}$; no improvement with glasses. Visual fields concentrically contracted.

Ophthalmoscopic Examination.—Retinitis pigmentosa of both eyes.

Father and mother were not related, and had only two children, both girls. Patient's sister is very short-sighted. She has one paternal uncle who is very short-sighted, but no other relative with defective vision in a very large circle of connections. Her mother died suddenly, without previous illness, at the age of 47.

CASE XIV.—Mrs. J. H. M., æt. 50. Has been near-sighted from childhood; has had asthenopia for two years, and is growing worse. She has slight conjunctivitis.

R.V. $= \frac{5}{100}$; V. $= \frac{20}{40}$ with $-\frac{1}{9}$.

L.V. $= \frac{20}{60}$; V. $= \frac{20}{30}$ with $-\frac{1}{42}$.

Both visual fields are limited.

Ophthalmoscopic Examination. — Retinitis pigmentosa, the pigment deposits being principally in the temporal part of the periphery of each fundus.

No consanguinity of parentage or known heredity.

CASE XV.—O. L. W., æt. 58, machinist. Sight began to fail twenty years ago, and he has not been able to read for ten years. He never has pain in his eyes, except when out in the wind. He sees objects, but fails to count fingers correctly with either eye.

Ophthalmoscopic Examination.—Retinitis pigmentosa, with atrophy of optic nerve, both eyes.

No consanguinity of parentage, syphilis, or known heredity.

CASE XVI.—Miss M. C., æt. 15. Has always had rather poor vision, and never could see well in the night, or in a darkened room. Her sight has failed lately.

R.V. $= \frac{20}{50}$; L. V. $= \frac{20}{70}$; no improvement with glasses. Both visual fields greatly concentrically contracted.

Ophthalmoscopic Examination.—Retinitis pigmentosa, with marked absence of pigment in its normal position in the retina.

No heredity or consanguinity of parentage traceable.

CASE XVII.—M. E., æt. 30, carpenter. Never noticed any trouble with eyes till five or six years ago, and then first began to have difficulty in getting about at night. It increased up to about a year

ago, since which it has been at a standstill. Things began to blur about a year ago.

R.V. = $\frac{20}{20}$; Hm. $\frac{1}{36}$. L.V. = $\frac{20}{20}$ (—) E.

Visual field, right, most of upper half gone; left, only infero-temporal quadrant remains.

Ophthalmoscopic Examination.—Retinitis pigmentosa well-marked in both eyes.

No consanguinity of parentage, and the patient never heard of any cases of poor eyesight in the family.

CASE XVIII.—J. R. P., æt. 44, farmer. Lost right eye when a boy; when eight years old happened to close left eye, and found himself in darkness. Sight in left eye began to fail noticeably fifteen months ago, and he has not been able to read for five months. There is smarting and stinging of the left eye.

R.V. = counts fingers in extreme temporal portion of field. L.V. = $\frac{20}{60}$; no improvement with glasses. Visual field limited concentrically.

Ophthalmoscopic Examination.—Retinitis pigmentosa, with choroiditis of both eyes.

He has been treated with mercurials, leeches to temples, and strychnine injections, without benefit.

No consanguinity of parentage. Maternal grandfather had seven children. The families of five have had more or less trouble with their sight. Of his father's eight children, patient's eldest sister and himself are the only ones affected with retinitis pigmentosa.

CASE XIX.—Mrs. S. W., æt. 32. Has had weak eyes for over a year, and has not been able to use them to any extent in reading or sewing.

V. = $\frac{20}{20}$ each; E.; no insufficiency. Ophthalmoscope shows delicate changes about the macula, and an extensive plaque of the changes characteristic of retinitis pigmentosa in the periphery infero-nasally from disk. No limitation of fields. No consanguinity. Mother has atrophy of optic nerves, and a sister is near-sighted.

CASES XX., XXI., and XXII.—In 1876 I became acquainted with a family in Massachusetts by the name of B——, three members of which were afflicted with retinitis pigmentosa, and possibly a fourth, whose eyes I had no opportunity of examining.

(20). The eldest brother, now 49 years old, having always had poor sight, became totally blind at the age of 25. Ophthalmoscopic examination showed the characteristic pigmentary deposits scattered

over the whole fundus, atrophy of the optic nerve, and posterior polar cataract in both eyes.

(21). A younger brother, now 30 years old, could see sufficiently well to do a farmer's work up to the age of 15. He can still see to find his way about. He has retinitis pigmentosa, with atrophy of optic nerve, and posterior polar cataract, of both eyes, the same as his brother. Neither of the brothers is married.

(22). The third is a married sister, 46 years of age. Although the subject of marked retinitis pigmentosa in both eyes, she still retains sufficient sight to do her own housework. She has neither polar cataract nor marked atrophy of her optic nerves. She has had three children. The first died at 16 weeks, having always been apparently healthy; "took cold," and was given an overdose of medicine by mistake. The second was apparently healthy, but "took cold," and died suddenly at 11 weeks. The third, always sickly and "cankered," died at 6 weeks.

Another brother, now 33, has used glasses some ten years, only for reading. He keeps a baker's shop, and his eyes do not trouble him when about his business. The oldest sister, over 50, and the brother and sister next younger than the married sister whose case is given, have no trouble with their eyes. The three that are said to have good eyes are the first, fourth, and fifth. The four that have poor eyes are the second, third, sixth, and seventh.

The parents of this afflicted family were *not* blood-relations.

The father's aunt, blind from youth, died at 60.

The father's father had inflammation in his eyes "from a cold," and was blind for three or four years before his death, at the age of 76.

Case 4. Dec. 9, '80. Mr. C. aed. 54, asked me to examine his eyes. I found a few radiating opaque streaks in both lenses, besides well marked retinitis pigmentosa, with small retinal vessels, and ill-defined margins to the discs. Otherwise, his eyes were normal. He could distinguish only the brightest light. The interesting points of his statement were these: Until he was twenty years of age he saw well enough only to grope his way about when out of doors. Since that time he had been totally blind. He was one of twelve children, all of whom lived until the youngest was thirty years old; of these seven were born blind or nearly so, the others having good sight. The previous family history disclosed no eye trouble. Mr. C. married one of fifteen healthy children. From this union several children were born, all with good eyes. The eldest son married his cousin who could see well, but who was the daughter of a blind uncle—his father's brother—and their two children were born blind.

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A CASE OF SPONTANEOUS CURE OF SUBRETINAL EFFUSION. By David Webster, M.D., of New York.

At the eleventh annual meeting of this society I reported "a case of spontaneous cure of subretinal effusion" which occurred while the patient kept the supine position for a period of ten days. I have now a similar case to report. This case, like the former, occurred in the private practice of Dr. C. R. Agnew, and was carefully observed by him as well as by myself.

April 8, 1876.—W. B. H., æt. 47, clerk, has been very near-sighted, in both eyes, all his life. A week ago he first noticed a dark spot over his right eye. This dark spot gradually increased in size until now there remains only sufficient vision to count fingers at a distance of one foot, and that only in the extreme infero-nasal periphery of the visual field. Ophthalmoscopic examination shows detachment of the retina.

The left eye has never been of much use to the patient. It is myopic over one-half, and has vision less than $\frac{4}{200}$. Inspection shows that it is the subject of corneal and lenticular opacities, with very extensive staphyloma posticum.

A trial of the supine position was advised.

May 16.—The patient states that he went home and lay on his back twenty-three days, in a moderated light. He has vision $\frac{10}{200}$ with his spectacles, and he feels that his sight is improving every day. No separation of the retina can now be seen, but in the vitreous are some floating bodies.

April 8, 1878.—It is now just two years since we first saw Mr. H. His right eye now has vision $\frac{20}{100}$ with $-\frac{1}{24}$, which he wears all the time. The visual field is complete. There are still some floating bodies in the vitreous, and large staphyloma posticum.

Mr. H. gives the following history of his recovery: he had no drops put into his eyes, nor were they bandaged when he lay on his back. After he lay on his back two or three days, everything looked of a beautiful *purple* color. After that an appearance like steam came over his eye, and that kept growing clearer and clearer all the

time, and the last few days there was a little black spot which kept going round and round like a pin-wheel, and growing smaller and smaller until it finally disappeared. After he got up everything was clear, but of a kind of a *greenish* cast. This greenish tinge lasted for a week, and then disappeared. Vision has improved ever since, and he believes it to be better now than before the detachment. He has been engaged in his business as clerk for the last seven months.

Dr. Prout remarked that in the treatment of subretinal effusion the prolonged recumbent position, as proposed by Samelsohn in 1875, is to a certain extent illogical, and in very many cases perturbating. Every one has noticed that cataract patients are sometimes injuriously affected by the necessary confinement to bed after extraction. A patient with a felon on his finger will not allow it to hang down, nor find the greatest degree of comfort for it in the horizontal position; he will carry the hand so that the blood may easiest run *from* the affected part. The quiet lying in bed keeps the blood in the head and *about* the orbit, even if it is assumed that the intra-ocular blood-pressure remains unchanged, which the speaker by no means admits. Why is it that in seriously inflamed eyes and after operations it is necessary to forbid mastication?

The subretinal fluid tends to gravitate to the lowest part of the eye. Rest in bed on the back, therefore, would maintain the separation where its injurious effects are greatest. Could the patient lie prone the fluid would tend to gravitate to the ciliary region, where the blood-supply, and consequently, we may assume, the absorbent power are greatest, and his chances of recovery would be improved.

But the real curative agent is *rest*, as nearly absolute functionally and mechanically as possible, and to obtain this great good the smaller evil of the faulty position must be tolerated, unless we can find a substitute. Very few patients will, while allowed to move about, keep the head and eyes at rest. Hence the necessity for the quiet rest in bed. I will illustrate this by a case. J. W. P., aged about 60, before coming to me had already tried for more than two weeks the recumbent position. The effect on the eye was beneficial, and being a man of robust health and excitable temperament, the bed had become excessively irksome to him. The visual field was lost except to the outer side. Still, as nothing else promised any relief—the other eye had been lost twelve years before —he wished to try this mode of treatment again. He was told that functional and mechanical *rest* was the one thing needful, that the disturbing in-

fluence of lying in bed was prejudicial, and that rest could be obtained without its being necessary to keep the horizontal position constantly. He could bandage his eye and sit up every day, taking great care to avoid sudden movements, etc. He went home, sat in an easy rocking-chair, which put his body at an angle of about forty-five degrees with the horizon, and went to sleep expecting to commence the bed-and-rest treatment on retiring that evening. He slept from two to six P.M., and on waking was astonished to find a very nearly complete restoration of the visual field, with, however, quite dim vision. In order to avoid any motion he continued in the chair all night, going to bed next morning. Nearly every day he sat up in the chair, avoiding quick movements of the body and keeping his head as still as possible. He could not stay all day in bed with any comfort, and it was clear that to attempt to maintain absolute quiet would very much injure his general health. This course was maintained for about three weeks, when he was allowed to go out for exercise.

The condition of the retina has not improved; the visual field is of very nearly normal extent, but vision continues very bad.

NOTE.—As a final effort, local depletion, which before did good, but the improvement did not persist, was again resorted to, by means of Heurteloup's artificial leech, but with injurious result.

BY T. Y. SUTPHEN, M. D.

Case 1. Alfred M., aed 36, a jeweler, consulted me about his eyes, February 10th, 1880. Was a myope, and for years had been wearing $-\frac{1}{8}$ glasses constantly. He stated that ten days before he was struck upon his right temple by a piece of iron, which blow was followed by swelling and severe pain, but which quickly subsided. Five days before I saw him he discovered great impairment of vision in his right eye, accompanied with a peculiar full feeling. When examined the globe was found soft, pupil reacted slowly to light, and field of vision was limited to the upper and outer portion. The opthalmoscope disclosed extensive detachment of the retina upwards and outwards, and filling about one-half of the vitreous chamber. In the left eye there were a few floating opacities in the vitreous, some small patches of pigment in the choroid, as well as a dark crescent about the disc, with slight atrophy of the choroid on the border nearest the macula. The patient was told the gravity of the trouble, and consented to remain at home. He was placed in bed in a dark room, both eyes bandaged, mercury used as inunction, and saline laxitives ordered. For six days this treatment was pursued, each day the bandage being readjusted, after instilling a weak atropine solution. By this time the sense of fullness had entirely left; the globe was still soft, but the pupil responded readily; the field of vision was normal, and a red reflex was obtained from all parts of the fundus. Amount of vision was not determined. The patient could not be persuaded any longer to remain in bed, and returned to his occupation. The inunctions were stopped, and Potass, Iod. gr. v. t.i.d. ordered. March 15th returned, and stated that his eyes felt as well as ever, except that there was considerable haziness about the vision of the right one. There were numerous floating opacities in the vitreous, but the retina appeared to be in its normal position; the field of vision was good, and his sight 20-100 with $-\frac{1}{8}$. One year later the patient was met, and he said there was no material change in the vision of his right eye.

Case 2. On May 9th, 1880, Clara B., aed 18, consulted me, stating that she could not see things directly before her when the right eye was closed, but could distinguish objects slightly at one side. Her field of vision was normal, but there was a well marked central blind spot. A detachment of the retina was found at the macula, extending towards the disc, and hiding the border on that side. The entire detachment was about three lines in diameter. Patient was emmetropic. The same course of treatment was pursued as in case 1, omitting the use of mercury. May 25th, scarcely any evidences of a central scotoma were noticed by the young lady. S.= 20-20 ophthalmoscope showed a very faint grayish appearance at the macula. At the present time there is no return of the trouble.

These two cases are cited, not because of their rarity, but as farther testimony to the efficacy of perfect rest, and the compress bandage in the early days of retinal detachment.